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NOTE: The Solicitations and topics listed on this site are copies from the various SBIR agency solicitations and are not necessarily the latest and most up-to-date. For this reason, you should visit the respective agency SBIR sites to read the official version of the solicitations and download the appropriate forms and rules.

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[1. OSD12-T01: Advanced Separation Technologies for Extraction of Rare Earth Elements \(REE\)](#)

Release Date: 07-26-2012 Open Date: 08-27-2012 Due Date: 09-26-2012 Close Date: 09-26-2012

OBJECTIVE: The objective of this research is to conduct fundamental surface chemistry measurements and demonstrate the use of these data to laboratory and small scale froth flotation systems so that more effective recovery can be achieved than with existing methods. DESCRIPTION: A critical step in the extraction of elements from ore, especially rare earth elements that are found in complex mi ...

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[2. OSD12-T02: Novel Primary Processing of Scarce Element Ores](#)

Release Date: 07-26-2012 Open Date: 08-27-2012 Due Date: 09-26-2012 Close Date: 09-26-2012

OBJECTIVE: The objective of this project is to develop and demonstrate at a relevant laboratory scale a novel, efficient, and environmentally friendly approach to the extraction, concentration, and separation of rare-earth elements from common ore stocks. This project supports the goals of the Materials Genome Initiative (MGI) in the area of Integrated Computational Materials Engineering (ICME). ...

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[3. OSD12-T03: Novel Electrolytic Extraction Processes for Scarce Elements](#)

Release Date: 07-26-2012 Open Date: 08-27-2012 Due Date: 09-26-2012 Close Date: 09-26-2012

OBJECTIVE: The objective of this project is to design an electrode/electrolyte system for the electrolytic reduction of rare-earth and scarce metals directly from refined feedstocks. This project also supports the goals of the Materials Genome Initiative (MGI) in the area of Integrated Computational Materials Engineering (ICME). DESCRIPTION: The rare-earth elements find uses in hundreds of h ...

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[4. OSD12-T04: Efficient, Environmentally-Compatible Recovery Technologies for Rhenium and Other Strategic Critical Materials](#)

Release Date: 07-26-2012 Open Date: 08-27-2012 Due Date: 09-26-2012 Close Date: 09-26-2012

OBJECTIVE: The objective of this research is to demonstrate advanced, environmentally sound approaches to one or more of the following challenges associated with the recovery of rhenium: (1) economically sound methods to comminute superalloy scrap for subsequent selective treatment; (2) selective oxidation and volatilization to extract and recover rhenium; and (3) pyrometallurgical techniques to i ...

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[5. OSD12-T05: Theory-Driven Protocols for Replacing Elemental Composition of Strategic Materials](#)

Release Date: 07-26-2012 Open Date: 08-27-2012 Due Date: 09-26-2012 Close Date: 09-26-2012

Objective: Use theory and computing to expedite discovery of new, thermodynamically stable compounds as replacements for strategic materials that contain rare, expensive or difficult to obtain elements of the periodic table. Description: The angst surrounding scarce and strategic materials availability has prompted numerous workshops and policy studies focusing on what to do. Mitigating action ...

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[6. OSD12-T06: Sustainable Alloy Design: Rare Earth Materials Challenge](#)

Release Date: 07-26-2012 Open Date: 08-27-2012 Due Date: 09-26-2012 Close Date: 09-26-2012

OBJECTIVE: The objective of this basic research announcement is building the foundation for the discovery, characterization and predictability of non rare-earth containing high temperature aerospace alloys for high temperature applications. The program seeks highly innovative and nontraditional approaches that advance the fields of high temperature structural materials, and electro-physics resea ...

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7. OSD12-T07: HIGH STRENGTH AND TOUGHNESS TUNGSTEN CARBIDE (WC) WITH NON-COBALT (Co) MATRICES

Release Date: 07-26-2012 Open Date: 08-27-2012 Due Date: 09-26-2012 Close Date: 09-26-2012

Description C Increasing weapon lethality for the individual soldier has been a long-standing goal of the US Army. Tungsten carbide (WC) is a common material used in many small caliber armor-piercing projectiles. These projectiles act as rigid bodies during impact at 0 degrees obliquity and achieve twice the penetration depth of equivalent depleted uranium and tungsten heavy-alloy projectiles. ...

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8. OSD12-T08: Effective Cyber Situation Awareness (CSA) Assessment and Training

Release Date: 07-26-2012 Open Date: 08-27-2012 Due Date: 09-26-2012 Close Date: 09-26-2012

OBJECTIVE: To develop a novel human-in-the loop simulation and assessment system that integrates various network models, attack graph visualization, low-level vulnerability information, and decision support functions for cyber situation awareness research and for assessing and enhancing team cyber situation awareness and assisting cyber analyst training. DESCRIPTION: The recent increase in cyb ...

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